

# DC-to-DC Controller

High Efficiency Cathodic Protection Controller  
when DC power sources are available from TEG,  
Solar, or other sources.



## Innovation

Corrosion Service is pleased to offer our Cathodic Protection Controller, DC-to-DC converter designed to supply continuous power for several CP applications including our Cathodic Protection Microgrid system that is designed to supply continuous power during harsh North American winters.

## Description

The DC-to-DC converter is a small, high efficiency, low cost 50-volt DC/DC converter. It is a fully automatic controller that provides user adjustable control for the output, based on potential, voltage, and current control set-points.

Unlike SCR-based rectifiers which require AC input, the switching operation of this controller allow it to be powered from DC sources such as batteries.

## Reliable

Our system is based on our long history of providing reliable industry solutions for the ever-evolving Cathodic Protection industry.

## Features & Benefits

- + High efficiency Switching Current Source providing 96% efficiencies.
- + Due to its high efficiency, less heat is generated, and less cooling is required during operation.
- + Ideally suited for microgrids where cold winter conditions exist.
- + DC output 0 – 50 volts, and current mode up to 6 amps.
- + Output controlled (voltage, potential or current modes).
- + Cooling and Over Temperature Protection to prevent overheating.
- + Under-Voltage Protection to ensure voltage source is protected (batteries).
- + Current Limit - the output current is limited to 12A to protect the power switches (over current protection).
- + In-house designed and built by Corrosion Service with a history of quality products and services.

## Technical Data

### PERFORMANCE

Input Voltage	24Vdc to 35Vdc
Efficiency	Over 96%
	(Based on nominal conditions of 24Vdc input, 25°C ambient and 300W output (6Adc at 50Vdc))

### DC OUTPUT

Output Power	300W (6Adc at 50Vdc)
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### CONTROL OPTIONS

Voltage Mode	Up to 50V
Current Mode	Up to 6A
Potential Mode	+1000mV to -4000mV

## Protections

The Controller protects itself and disables the output in situations where operation can lead to electrical or thermal over-stress. The recovery is automatic once the overstressing factor recedes.

### Cooling and OTP (Over Temperature Protection)

Cooling is provided by a fan which blows over both the Core Control board and more importantly over the Power Module to protect the device during high seasonal or daily temperatures. The fan has a high service rating and depending on operation should last more than 15 years or significantly longer if operated at the lower output levels.

### DC Input UVP (Under-Voltage Protection)

The controller is designed to operate at the nominal input voltage of 24V, the unit protection will initiate at 23V. The unit will automatically restart once the supply voltage reaches a minimum of 23.5V.

### DC Output Lightning/Surge Protection

The DC output utilizes industry leading Lightning Protection Corporation 40KA arresting device to ensure components are protected during fault conditions.

### Current Limit

The output current is limited to 12A to protect the power switches, the protective circuitry being part of the Power Module.

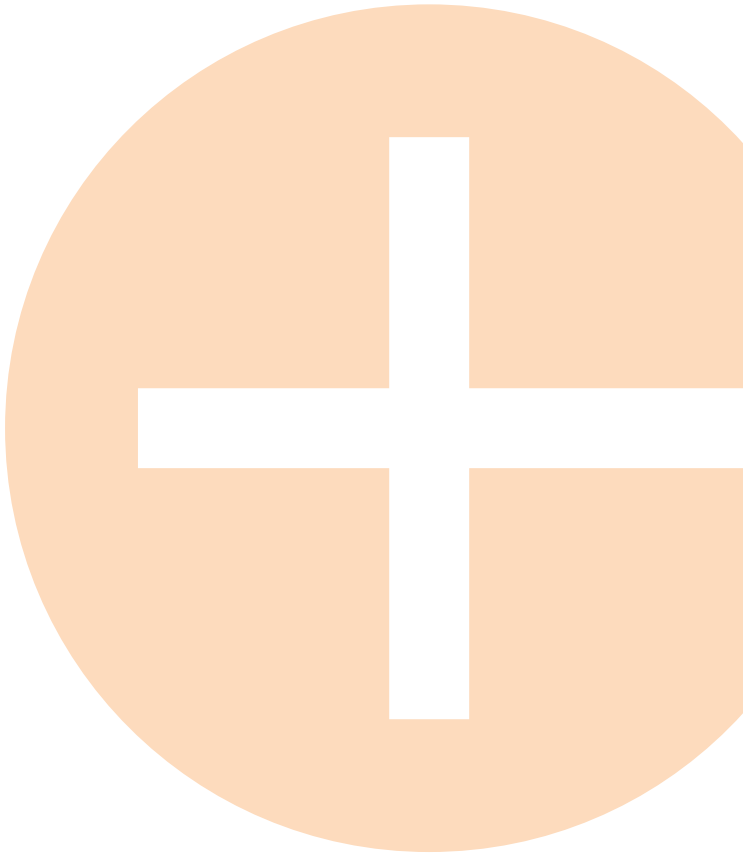
## Components

Consists of three modules (boards):

The Interface Module provides the user a display and a multifunctional rotary control button.

The Core Control Module performs several functions including but not limited to output, voltage and potentials. This component is the brain of the unit.

The Power Module converts the input power to the required output as driven by the Core Control module.



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